

REMARKS

The Office Action of January 18, 2007 has been reviewed and the Examiner's comments carefully considered. The present Amendment amends claims 22 and 36 in accordance with the specification and drawings as originally filed. No new matter has been added. Specific support for these amendments can be found on page 2, lines 15-18 of the specification as originally filed. Accordingly, claims 22, 24, 26-30, 32-34, 36, 40 and 42 remain in this application, and claims 22 and 36 are in independent form.

I. 35 U.S.C. §112, Second Paragraph Rejections

Claim 22 stands rejected under 35 U.S.C. §112, second paragraph, for indefiniteness. Specifically, the Examiner contends that the language "the structure" in line 4 of the claim lacks sufficient antecedent basis. The Applicant believes that the above amendment to claim 22 overcomes the Examiner's indefiniteness rejections.

Reconsideration and withdrawal of this rejection is respectfully requested.

II. 35 U.S.C. §103 Rejections

Claims 22, 24, 26-29, 31-34, 36, 40 and 42 stand rejected under 35 U.S.C. §103(a) for obviousness based upon United States Patent No. 4,175,860 to Bacus (hereinafter "the '860 Bacus patent") in view of United States Patent No. 4,741,043 to Bacus (hereinafter "the '043 Bacus patent") and United States Patent No. 5,134,662 to Bacus et al. (hereinafter "the '662 Bacus patent"). In view of the above amendments and the following remarks, the Applicant respectfully requests reconsideration of these rejections.

As now defined by amended independent claim 22, the present invention is directed to a device for selecting and recording an image of an irradiated or emissive object comprising complexes of DNA, RNA or proteins with an improvement comprising an immovable object holder for positioning the object in a stationary position, at least one mirror for reflecting an image of the object and a camera. The at least one mirror is displaceable for selecting a part of the image from the reflected image of the object while holding the object in the stationary position.

As now defined by amended independent claim 36, the present invention is further directed to a method for selecting an image to be recorded with a camera which forms a part of an irradiated or emissive object comprising complexes of DNA, RNA or proteins. The method comprises the steps of A) placing the object in a stationary position on an immovable object holder, B) reflecting an image of the object with at least one mirror, and C) selecting with a camera, and by displacing at least one mirror, a part of the image of the object to be viewed from the reflected image while holding the object in the stationary position.

The '860 Bacus patent discloses an apparatus for performing automated classification of cells. Referring to Fig. 1 of this patent, the apparatus includes a lens (12), a beam splitter (20), and a camera (24). The '043 Bacus patent is directed to a system for analyzing and quantifying the DNA in specimen cells by image analysis using pattern recognition, and is provided by the Examiner as allegedly teaching the recording of an image of an irradiated or emissive structure of DNA, and placing the DNA structure in a stationary position for cellular image analysis. The '662 Bacus patent is directed to a system for use in performing automated classification of cells and other microscopic specimens, and is provided by the Examiner as allegedly teaching at least one displaceable mirror.

A. No teaching or suggestion of an immovable object holder for positioning an object in a stationary position

The '860 Bacus patent, the '043 Bacus patent and the '662 Bacus patent, either alone or in combination, do not teach or suggest an *immovable* object holder for positioning the object *in a stationary position* as required by independent claims 22 and 36. Instead, these references disclose that it is the standard, in microscopy, to move the object and keep the imaging equipment stationary. This is opposite to the claimed invention, wherein the object remains stationary and the at least one displaceable mirror moves. The advantage of holding the object on an immovable object holder in a stationary position is that it simplifies construction thereby saving costs over comparable systems. Each of the Bacus patents require some type of X-Y table as the object holder.

Specifically, the moving of an object holder is mentioned explicitly in the following parts of the '043 Bacus patent:

A) The '043 Bacus patent shows the stationary camera (18) in the figures, as well as knobs (70) to move the microscope stage (51) and object in the X and Y directions;

B) Column 7, lines 16-18, where it is described that "the operator moves the microscope stage by turning the conventional X and Y knobs (70) to shift the control cell objects (40) into view of the monitoring screen"; and

C) Column 7, lines 49-51, where it is described that "the operator will move the X and Y knobs (70) for the microscope stage (51) to move into view on the monitoring screen (37) a first field of specimen cell objects to be analyzed".

The moving of an object holder is also mentioned explicitly in the following parts of the '860 Bacus patent:

A) The '860 Bacus patent mentions a similar setup, but now with automated X positioning controller (14) and Y positioning controller (16);

B) Column 4, lines 42-44, where it is described that "the apparatus includes a stage upon which the slide is placed and the slide is positioned to a location..."; and

C) Column 5, line 65 – column 6, line 5, where it is described that "the stage (10) is adapted to be **movable** so that all portions of the slide can be brought under the microscope objective (12) optics for microscopic imaging. The stage (10) is controlled by X and Y positioning controllers (14) and (16), respectively..., so that the entire slide can be systematically positioned beneath the microscope objective optics".

Finally, the moving of the object holder is also mentioned explicitly in the following parts of the '662 Bacus patent:

A) The '662 Bacus patent mentions a similar setup that includes positioning means (12), (17) and (70) (see Fig. 1); and

B) Column 6, lines 25-31, where it is described that "microscope (15)...includes a platform (51) incrementally **movable** in the X and Y directions through positioning means (12) and (17), respectively, to view the total area of slide (14)."

Additionally, the Examiner argues, on page 3 of the Office Action, that after controlling the X and Y controllers, the stage (10) of the '860 Bacus patent takes stationary

form. However, independent claims 22 and 36 have been amended to require that the object holder is immovable.

Accordingly, the combination of the '860 Bacus patent, '043 Bacus patent and the '662 Bacus patent does not teach or suggest an *immovable* object holder for positioning the object *in a stationary position*.

B. No teaching or suggestion of displacing at least one mirror while holding the object in a stationary position

The '860 Bacus patent, the '043 Bacus patent and the '662 Bacus patent, either alone or in combination, do not teach or suggest *displacing* at least one mirror for selecting a part of the image from the reflected image of the object while holding the object *stationary* as required by independent claims 22 and 36. Each of the Bacus patents discloses the use of stationary mirrors and a movable object holder. The advantage of moving the mirrors, rather than the object, is that there is less chance of damaging the object and spilling hazardous chemicals when the object can remain stationary.

The Examiner specifically contends that the '662 Bacus patent teaches at least one displaceable mirror; however, the Examiner does not provide a reference as to where it is discussed in the '662 Bacus patent. In the Office Action of May 26, 2006, the Examiner describes that this reference discloses a rotatable mirror as element (160) in Fig. 3.

While the Examiner is correct that mirror (160) of the '662 Bacus patent is rotatable, this reference only discloses that this mirror is rotatable during initial equipment calibration as described in column 27, lines 27-61. Therefore, the rotation of this mirror (160) cannot be considered a displacement for selecting a part of the image from the reflected image of the object as required by the independent claims. Instead, the mirror (160) is displaced while a grid pattern is mounted to the microscope stage (see column 27, lines 29-31 of the '662 Bacus patent) and then secured in position by locking screws (430) after the calibration procedure (see column 27, lines 60-61 of the '662 Bacus patent).

Accordingly, the combination of the '860 Bacus patent, '043 Bacus patent and the '662 Bacus patent does not teach or suggest *displacing* at least one mirror for selecting a part of the image from the reflected image of the object while holding the object *stationary*.

C. The Bacus patents are non-analogous art

Furthermore, the Applicant continues to contend that the Bacus patents are non-analogous art. Pursuant to MPEP §2141.01(a), in determining whether a prior art reference is analogous, it should be determined (1) whether the art is from the same field of endeavor, and (2) if the reference is not within the field of the inventor's endeavor, whether the reference is still reasonably pertinent to the particular problem with which the inventor is involved. In determining whether the reference is reasonably pertinent to the problem the invention intends to solve, the purpose of both the invention and the prior art are important. Thus, if a reference disclosure has the same purpose as the claimed invention, an inventor may well have been motivated to consider the reference; on the other hand, if it is directed to a different purpose, the inventor would have less motivation to consider it.

Here, the field of technology of the Bacus patents is completely different from the present invention. The field of technology of the present invention relates to the selection and recording of biotechnical samples (i.e., DNA/RNA) of a completely different size and scale than the cellular analysis techniques and apparatus disclosed by the Bacus patents. Applicant respectfully submits that one skilled in the art would not look to the cellular analysis structure of the Bacus patents when seeking to solve the problem associated with selecting and recording images of DNA, RNA or proteins. For example, the '043 Bacus patent discloses a technique for observing and recording visual information that is clearly more detailed, requiring a microscope for measurements as to the area of microns (see, for example, column 4, line 34; column 4, line 52; column 5, line 37; column 5, line 45 and column 5, lines 61-62). On the other hand, the present invention utilizes at least a millimeter scale of selecting and recording. Accordingly, the scale difference between the two fields of endeavor is entirely too great (at least approximately 10^3) for the Bacus patents to be considered reasonably pertinent to the field of the Applicant's endeavor.

For the foregoing reasons, the Applicant believes that the subject matter of amended independent claims 22 and 36, is not rendered obvious by the '860 Bacus patent in

view of the '043 Bacus patent and the '662 Bacus patent. Reconsideration of the rejection of claims 22 and 36 is respectfully requested.

Claims 24, 26-29, 31-34, 40 and 42 depend from and add further limitations to amended independent claims 22 and 36, or a subsequent dependent claim, and are believed to be patentable for the reasons discussed hereinabove in connection with amended independent claim 22. Reconsideration of the rejection of claims 24, 26-29, 31-34, 40 and 42 is respectfully requested.

Claim 30 stands rejected under 35 U.S.C. §103(a) for obviousness based upon the '860 Bacus patent in view of the '043 Bacus patent and the '662 Bacus patent as applied to claim 22, and further in view of United States Patent No. 5,998,796 to Liu et al. (hereinafter "the Liu patent"). In view of the above amendments and the following remarks, the Applicant respectfully requests reconsideration of these rejections.

Claim 30 depends from and adds further limitations to amended independent claim 22. The combination of the '860 Bacus patent, the '043 Bacus patent and the '662 Bacus patent is discussed hereinabove in connection with amended independent claim 22. The Liu patent is directed to a detector for DNA sample identification and is provided by the Examiner as allegedly teaching a displaceable camera. The Liu patent does not cure the deficiencies of the combination of the '860 Bacus patent, the '043 Bacus patent and the '662 Bacus patent. Therefore, claim 30 is believed to be patentable for the reasons discussed hereinabove in connection with amended independent claim 22. Reconsideration of the rejection of claim 30 is respectfully requested.

III. Conclusion

Based on the foregoing amendments and remarks, reconsideration of the rejections and allowance of pending claims 22, 24, 26-30, 32-34, 36, 40 and 42 is respectfully requested.

Respectfully submitted,

THE WEBB LAW FIRM

By



John W. McIlvaine
Registration No. 34,219
Attorney for Applicants
700 Koppers Building
436 Seventh Avenue
Pittsburgh, Pennsylvania 15219
Telephone: 412-471-8815
Facsimile: 412-471-4094
E-mail: webblaw@webblaw.com